

#31

COMPLETE

Collector: Email Invitation 1 (Email)
Started: Friday, January 19, 2024 9:04:01 AM
Last Modified: Friday, January 19, 2024 4:53:02 PM
Time Spent: 07:49:01
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Page 1: I. Program Overview and Update

Q1

1. Department(s) Reviewed:

Computer Science and Computer Information Systems

Q2

2. Lead Author:

Miriam Simpson

Q3

3. Collaborator(s) - list of any person that participated in the preparation of this report:

Hau Nguyen, George Dowden, Curtis Sharon

Q4

4. Dean/Manager(s):

George Dowden

Q5

5. Initial Collaboration Date with Manager/Dean:

Enter the initial date you met **08/31/2023**
with your dean to discuss
your program review using
this format: MM/DD/YYYY

Q6

6. Program Update (Required): Please summarize the changes, additions, and achievements that have occurred in your program since the last program review. You can access 2022 program reviews on the program review webpage.

Successes:

1. The San Diego Economic Development Corporation (EDC) announced that the Cuyamaca College Computer Information Science (CIS) Program is now a "Verified Program of Computing Talent." This means employers in our region recognized and validated the CIS program is adequately preparing students with the skills and training necessary to meet industry demand.
2. ZTC grant awarded for developing a computer science transfer degree with no textbook costs.

Problems:

1. Staffing: We now have no full-time Computer Science or Computer Information Systems Faculty. The one remaining faculty member is on an indefinite leave. Due to the lucrative nature of industry jobs in this field, it is also difficult to recruit and retain high-quality part-time faculty.
2. Equity: truly huge equity gaps for basically all non-white students, very low enrollment for women.

For Clarity: Computer Science/Engineering (CS/CE) and Computer Information Systems (CIS) are two VERY distinct fields within the realm of computing, each with its own focus and career paths. CS/CE is an academic pathway requiring transfer to get to jobs like software engineering, while CIS is more of a career/certificate program designed to get students directly into the workforce.

Computer Science (CS) and Computer Engineering (CE):

1. Focus: CS/CE is all about learning the deep-down stuff that makes computers work like how to make computer programs, understand how computers think (algorithms), and how the parts of a computer work together.
2. Curriculum: This program primarily serves STEM transfer students in Computer Science and Computer and Electrical Engineering as well as returning professionals looking to update their skills with standalone courses or certificates.
3. Careers: Graduates often pursue roles as software developers, systems engineers, hardware engineers, and research scientists. They are equipped to develop new technologies and solve complex computing problems.

Computer Information Systems (CIS):

1. Focus: CIS focuses on the practical application of computing technology within the context of business and organizational needs. It emphasizes the use of information technology (IT) to solve business problems and improve processes.
2. Curriculum: This program primarily provides certificates and is more about getting students directly into jobs. Students in CIS programs study subjects like database management, information systems design, IT project management, and cybersecurity. Business courses such as accounting, marketing, and management are also often included.
3. Careers: Graduates typically work in roles such as IT managers, systems analysts, database administrators, and business analysts. They often bridge the gap between technical and business teams within an organization.

Page 2: II. Assessment and Student Achievement

Q7

7. Did your program complete and submit SLO assessment in the last year? If you are unsure, check the most recent updates on your program's SLO Assessment Updates.

No: Please describe the department's plan to update them:
This program now has no functioning full-time faculty making it very difficult to manage assessments. We hope that in the future the addition of someone to this role will allow planning of this nature. In the meantime, we will try to leverage part-time faculty participation.

Q8

7a. Which SLOs did you assess in the last year? If you did not assess in the last year, please share why, including whether your program is experiencing barriers to assessment or data submission, and/or if your program would benefit from outcomes and assessment support.

CIS 110, 140, 181

Q9

8. Please share any outcomes assessment projects your program has worked on in the last year, including SLOs on Canvas, PLOs by ACP, Equitable Assessment Strategies (innovative collective/common assessments, project-based, work-based learning, student-centered, etc.), or other.

With depleted leadership, this program is just trying to staff classes.

Q10

Respondent skipped this question

OPTIONAL: You may upload a copy of any assessment-related documents here. If you have an Excel sheet, please convert it to one of the supported files listed below before submission.

Page 3: II. Assessment and Student Achievement

Q11

9. Please discuss any equity gaps in access or success

Access

Gender - In both CS and CIS women are extremely underrepresented, although this mirrors a more global problem in these fields. In CS the number ranges between 13-21% female in the last 5 years. For context, that is lower than the national average of 18-19% which is extra tragic considering women are very overrepresented at Cuyamaca compared to the general population. CIS is not much better, but it at least matches the national average hovering around the 40% mark.

Race - Black and Hispanic students also tend to be slightly underrepresented in CS. As for CIS, Hispanic students are underrepresented while Black students tend to be overrepresented (but have horrible equity gaps for success)

Success

Gender - For CS and CIS, the women who are there seem to be doing fine.

Race -

CS: there are significant equity gaps for any students who are not white or Middle Eastern. Some are pretty bad with success gaps above 20% for Black and Hispanic students.

CIS: things are worse with huge equity gaps for everyone non-white, including Middle Eastern students, and some truly huge gaps for the growing population of black students.

Q12

10. What action will the department or discipline take to address these equity gaps? If equity gaps have been reduced or eliminated, please share what the program did to achieve this. If equity gaps still exist, consider the specific steps your department will take to address equity gaps.

These disciplines are ideal candidates for the implementation of equity-minded teaching practices. With only PT faculty, this could encourage participation in EMTLI and/or a community of practice. With a full-time faculty member, the program could have a specialized community of practice as well as a more comprehensive plan that includes long-term strategies for hiring, training, community building, and curriculum changes. This will not happen if the program remains essentially unstaffed in the leadership roles.

Q13

11. How has this data impacted the goals set in your previous comprehensive program review?

Both the previous goals and our current goals are focused on increasing representation for underrepresented populations and closing equity gaps.

Q14

12. Please describe the most significant or impactful ways your program worked across the college to advance the college's vision of equity, excellence and social justice through education over the past year.

As a discipline completely depleted of full-time faculty members we are just trying to keep the classes running and run the program as it is. There is not a lot of energy or resources for anything else. We would like to redesign the program to be more inclusive and equity-minded to create a reliable pipeline for our most vulnerable students to find stable, living-wage jobs by having valuable technical skills, but this requires specialized leadership within the program by someone with expertise in one or more of the specialties covered by this program. Not only do we not have that, but hiring and retaining part-time faculty in these disciplines is exceedingly hard. Anyone who meets min quals in this field can easily make 2-3 times what we pay, so we tend to get people in one or more of these categories (1) VERY new to the field, (2) Outdated skillsets that are unmarketable in industry, and/or (3) care more about teaching than money or are independently wealthy. Without naming names, you can guess how many are category 3.

Q15

13. What challenges is your program still experiencing due to the disruption of operations caused by the pandemic and the need to offer services in various modalities?

We have always offered most of our courses online, which is the benefit of a computer science program. We would still like for the labs to be capped lower than the 50-person limit so that faculty could give our students the time and feedback they need. Additionally, thanks to the prevalence of online courses, we now have access to more resources from the college to use for online courses.

Q16

Respondent skipped this question

OPTIONAL: Please upload any documentation you would like to include as part of your responses to this section of the program review.

Q17

Yes

11. Does your department offer classes that are approved distance education courses?

Page 5: DE Course Success Rates

Q18

12. If there were differences in success rates for distance education (online) versus in-person sections of program courses in your last comprehensive program review, what has the department done to address these disparities? If online and in-person sections had comparable success rates, please describe what the program did to achieve that.

There is approximately a 10% difference in retention and success rates between in-person and online courses. One of the main issues here is the large online class size. In-person classes are capped at room size but our online courses are stuck at 50. This means that online students have a worse ratio with the faculty. That alone could be an issue, but also no matter how technical something is, there is a human and community element to an in-person class that is harder to recreate in an online setting. Students who feel less connected are less engaged.

There is a significant difference with CIS 270 and CIS 271 classes in Fall 2021. This dramatic decrease was due to the large number of Incomplete grades issued because of technical issues (Program Failure on the part of Palo Alto networks).

Page 6: III. Previous Goals: Update

Q19

Previous Goal 1:

Increasing the completion and success rates within these courses leads to a larger population receiving industry certification. This increases the employability of our students and thus reduces equity gaps in the field.

Q20

Deleted

Previous Goal 1:

Page 7: III. Previous Goals: Update continued

Q21

Please describe the results or explain the reason for deletion/completion of the goal:

This goal did not have much of a concrete plan, and the person who wrote it is gone.

Q22

Yes

Do you have another goal to update?

Page 8: III. Previous Goals: Update continued

Q23

Respondent skipped this question

Link to College Strategic Goal - Which College Strategic Goal does this department goal most directly support? (Check only one)

Q24

Respondent skipped this question

Action Steps for the Next Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new laptop computers).

Q25

Respondent skipped this question

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q26

Respondent skipped this question

Do you have another goal to update?

Page 9: III. Previous Goals: Update continued

Q27

1. Previous Goal 2:

Increase enrollment by developing a relationship with the Create partnerships with some of the local middle schools (Hillsdale and Emerald), and High schools (Steele Canyon, Monte Vista, Mt. Miguel, and Helix) Tech teachers and become active in supporting their programs.

Q28

Not Started

3. Goal Status

Page 10: III. Previous Goals: Update continued

Q29

Respondent skipped this question

Please describe the results or explain the reason for deletion/completion of the goal:

Q30

Respondent skipped this question

Do you have another goal to update?

Page 11: III. Previous Goals: Update (If Applicable) continued

Q31 **Increase equitable access (enrollment)**

Link to College Strategic Goal - Which College Strategic Goal does this department goal most directly support? (Check only one)

Q32

Action Steps for the Next Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new laptop computers).

There is no way to carry out this goal without full-time faculty. However, the obvious first step would be to reach out to the local schools.

Q33 **New faculty position**

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q34 **Yes**

Do you have another goal to update?

Page 12: III. Previous Goals: Update continued

Q35

1. Previous Goal 3:

Increase retention and success by providing additional support for struggling students.

Q36 **Deleted**

3. Goal Status

Page 13: III. Previous Goals: Update continued

Q37

Please describe the results or explain the reason for deletion/completion of the goal:

There are not full-time faculty to design/run a program like this. At best we can direct PT faculty to campus resources but who is we?

Q38

No

Do you have another goal to update?

Page 14: III. Previous Goals: Update continued

Q39

Respondent skipped this question

Link to College Strategic Goal - Which College Strategic Goal does this department goal most directly support? (Check only one)

Q40

Respondent skipped this question

Action Steps for the Next Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new laptop computers).

Q41

Respondent skipped this question

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q42

Respondent skipped this question

Do you have another goal to update?

Page 15: III. Previous Goals: Update continued

Q43

Respondent skipped this question

1. Previous Goal 4:

Q44

Respondent skipped this question

3. Goal Status

Page 16: III. Previous Goals: Update continued

Q45

Respondent skipped this question

Please describe the results or explain the reason for deletion/completion of the goal:

Page 17: III. Previous Goals: Update continued

Q46

Respondent skipped this question

Link to College Strategic Goal - Which College Strategic Goal does this department goal most directly support? (Check only one)

Q47

Respondent skipped this question

Action Steps for the Next Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new laptop computers).

Q48

Respondent skipped this question

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Page 18: IV. New Goals

Q49

Yes

Would you like to propose any new goal(s)?

Page 19: IV. New Goals continued

Q50

1. New Goal 1:

New Goal 1: Implement Humanizing Online Teaching Practices

Q51

Eliminate equity gaps in course success (passing grade in class)

2. Which College Strategic Goal does this department goal most directly support? (Check only one)

Q52

3. Please describe how this goal advances the college strategic goal identified above.

Focusing on instruction and how faculty interact with students is the most reliable way to close equity gaps.

Q53

4. Please indicate how this goal was informed by SLO (student learning outcomes) assessment results, PLO (program learning outcomes) assessment results, student achievement data, or other qualitative or quantitative data (from any source):

Just looking at the tragic representation and success numbers. Equity gaps galore.

Q54

5. Action Steps for this Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new computer hardware).

Encourage part-time faculty in EMTLI, Humanizing STEM, and/or a STEM community of practice.
Recruit and train a full-time faculty member in equity-minded teaching practices so they can update curriculum and practices.

Q55

6. How will this goal be evaluated?

By monitoring equity gaps.

Q56

New faculty position

What resources, if any, are needed to achieve this goal?
Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q57

Yes

Do you have another New Goal?

Page 20: IV. New Goals continued

Q58

1. New Goal 2:

Create Modern Curriculum/Degrees/Certificates

Q59

Increase hiring and retention of diverse employees to reflect the students and communities we serve

2. Which College Strategic Goal does this department goal most directly support? (Check only one)

Q60

3. Please describe how this goal advances the college strategic goal(s) identified above.

This goal would add cyber security, cloud computing, and/or a more modern computer science curriculum that better aligns with the current industry to the catalog for these programs. This would give our students the job skills employers are looking for and give us a faculty member who could help us talk to district IT more effectively.

Q61

4. Please indicate how this goal was informed by SLO (student learning outcomes) assessment results, PLO (program learning outcomes) assessment results, student achievement data, or other qualitative or quantitative data (from any source):

- There are half as many African Americans and Hispanics in tech as in the rest of the private sector
- 83% of tech executives are white
- More than 50% of employees at Apple and Google are still white
- Diversity efforts could net the IT industry an extra \$400 billion in revenue each year.

The tech industry is investing heavily in closing these equity gaps. We are in a unique position to advance employment equity by working hard to recruit diverse talent as well as training our current and future faculty on equity in teaching.

Q62

5. Action Steps for this Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new computer hardware).

Hire full-time faculty members with proper skill sets to evaluate part-time instructors/run program
Update current courses, degrees, and certificates based on industry recommendations
Create new courses, and certificates

Q63

6. How will this goal be evaluated?

By monitoring enrollment and equity gaps. Long term we could look at transfer and job outcomes.

Q64

New faculty position

What resources, if any, are needed to achieve this goal?
Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q65

No

Do you have another New Goal?

Q66 Respondent skipped this question

1. New Goal 3:

Q67 Respondent skipped this question

2. Which College Strategic Goal does this department goal most directly support? (Check only one)

Q68 Respondent skipped this question

3. Please describe how this goal advances the college strategic goal(s) identified above.

Q69 Respondent skipped this question

4. Please indicate how this goal was informed by SLO (student learning outcomes) assessment results, PLO (program learning outcomes) assessment results, student achievement data, or other qualitative or quantitative data (from any source):

Q70 Respondent skipped this question

5. Action Steps for this Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new computer hardware).

Q71 Respondent skipped this question

6. How will this goal be evaluated?

Q72 Respondent skipped this question

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Q73 Respondent skipped this question

Do you have another New Goal?

Page 22: IV. New Goals continued

Q74 Respondent skipped this question

1. New Goal 4:

Q75 Respondent skipped this question

2. Which College Strategic Goal does this department goal most directly support? (Check only one)

Q76 Respondent skipped this question

3. Please describe how this goal advances the college strategic goal(s) identified above.

Q77 Respondent skipped this question

4. Please indicate how this goal was informed by SLO (student learning outcomes) assessment results, PLO (program learning outcomes) assessment results, student achievement data, or other qualitative or quantitative data (from any source):

Q78 Respondent skipped this question

5. Action Steps for this Year: If you are requesting resources in order to achieve this goal, please list them below as action steps and specify the type of request (e.g., submit technology request for new computer hardware).

Q79 Respondent skipped this question

6. How will this goal be evaluated?

Q80 Respondent skipped this question

What resources, if any, are needed to achieve this goal? Please select all that apply. Links to request forms are included below. All resource requests are due on the program review deadline.

Page 24: Final Check

Q81 I am ready to submit my program review

Are you ready to submit your program review? If you would like to go back and review a section, select a section a click "Next."
